Australian Standard™

Grid connection of energy systems via inverters

Part 1: Installation requirements

Standards Australia

This Australian Standard was prepared by Committee EL-042, Renewable Energy Power Supply Systems and Equipment. It was approved on behalf of the Council of Standards Australia on 18 June 2002 and published on 10 July 2002.

The following are represented on Committee EL-042:

Alternative Technology Association

Australian Electrical and Electronic Manufacturers Association

Consumers Federation of Australia

Electricity Supply Association of Australia

Ministry of Economic Development, New Zealand

National Electrical and Communications Association

Regulatory Authorities (Electrical)

Solar Energy Industries Australia

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PREFACE

This Standard was prepared by the Australian members of the Joint Standards Australia/Standards New Zealand Committee EL-042, Renewable Energy Power Supply Systems and Equipment and is based on requirements developed by a group of utility, photovoltaic and inverter industry experts coming together under the auspices of the Electricity Supply Association of Australia (ESAA) with the assistance of the Australian Cooperative Research Centre for Renewable Energy (ACRE).

After consultation with stakeholders in both countries, Standards Australia and Standards New Zealand decided to develop this Standard as an Australian, rather than an Australian/New Zealand Standard.

The objective of this Standard is to provide guidance for installers of inverter energy systems intended for the injection of electric power through an electrical installation to the electricity distribution network.

It is Part One of a three part series as follows:

AS 4777, Grid connection of energy systems via inverters

AS 4777.1 Part 1: Installation requirements (this Part)

AS 4777.2 Part 2: Inverter requirements

AS 4777.3 Part 3: Grid protection requirements

This Standard should be read in conjunction with the regulations, service and installation rules of the electricity distributor approving the connection.

The term ‘informative’ has been used in this Standard to define the application of the appendix to which it applies. An ‘informative’ appendix is provided for information and guidance.

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STANDARDS AUSTRALIA

Australian Standard
Grid connection of energy systems via inverters

Part 1: Installation requirements

1 SCOPE

This Standard specifies the electrical installation requirements for inverter energy systems and grid protection devices with ratings up to 10 kVA for single phase units, or up to 30 kVA for three-phase units, for the injection of electric power through an electrical installation to the electricity distribution network.

NOTES:

1 Although this Standard does not apply to larger systems, similar principles can be used for the installation of such systems.

2 This Standard does not cover detailed installation requirements for the energy source(s) and its associated wiring.

2 APPLICATION

This Standard should be used in conjunction with the installation requirements of the appropriate electrical distributor. The connection of an inverter energy system to an electrical installation connected to the electricity distribution network shall be approved by the appropriate electrical distributor.

3 NORMATIVE REFERENCES

The following normative documents contain provisions which, through reference in this text, constitute provisions of this Standard.

AS	
1319	Safety signs for the occupational environment
4777	Grid connection of energy systems via inverters
4777.2	Part 2: Inverter requirements
4777.3	Part 3: Grid protection requirements
AS/NZS	
3000	Electrical Installations (known as the Australian/New Zealand Wiring Rules)

4 DEFINITIONS

For the purpose of this Standard, the following definitions apply.

4.1 Distribution board

A switchboard other than a main switchboard.

4.2 Electrical installation

The definition in AS/NZS 3000 shall apply.

4.3 Electricity distribution network

The portion of an electrical system that is operated by an electrical distributor.

